

J. BRUSCI

RECEIVED

Page 1 of 8

SEP 28 2000

TECH CENTER 1600/2900

1631

RAW SEQUENCE LISTING

DATE: 09/19/2000

PATENT APPLICATION: US/09/297,648

TIME: 18:20:31

Input Set : N:\COPIES\!SEQLIST 08-28-00.TXT

Output Set: N:\CRF3\09192000\I297648.raw

4 <110> APPLICANT: Williams, Lewis T.  
5 Escobedo, Jaime  
6 Innis, Michael A.  
7 Garcia, Pablo Dominiguez  
8 Sudduth-Klinger, Julie  
9 Reinhard, Christoph  
10 Giese, Klaus  
11 Randazzo, Filippo  
12 Kennedy, Giulia C.  
13 Pot, David  
14 Kassan, Altaf  
15 Lamson, George  
16 Drmanac, Radoje  
17 Crkvenjakov, Radomir  
18 Dickson, Mark  
19 Drmanac, Snezana  
20 Labat, Ivan  
21 Leshkowitz, Dena  
22 Kita, David  
23 Garcia, Veronica  
24 Jones, William Lee  
25 Stache-Crain, Birjit  
27 <120> TITLE OF INVENTION: Novel Human Genes and Gene Expression  
28 Products II  
30 <130> FILE REFERENCE: 2300-1481  
32 <140> CURRENT APPLICATION NUMBER: 09/297,648  
33 <141> CURRENT FILING DATE: 2000-03-10  
35 <150> PRIOR APPLICATION NUMBER: 60/072,910  
36 <151> PRIOR FILING DATE: 1998-01-28  
38 <150> PRIOR APPLICATION NUMBER: 60/075,954  
39 <151> PRIOR FILING DATE: 1998-02-24  
41 <150> PRIOR APPLICATION NUMBER: 60/080,666  
42 <151> PRIOR FILING DATE: 1998-04-03  
44 <150> PRIOR APPLICATION NUMBER: 60/080,515  
45 <151> PRIOR FILING DATE: 1998-04-03  
47 <150> PRIOR APPLICATION NUMBER: 60/080,114  
48 <151> PRIOR FILING DATE: 1998-03-31  
50 <150> PRIOR APPLICATION NUMBER: 60/105,234  
51 <151> PRIOR FILING DATE: 1998-10-21  
53 <160> NUMBER OF SEQ ID NOS: 5252  
55 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
57 <210> SEQ ID NO: 1  
58 <211> LENGTH: 273  
59 <212> TYPE: DNA  
60 <213> ORGANISM: Homo sapiens  
62 <220> FEATURE:  
63 <221> NAME/KEY: misc\_feature

ENTERED

see p.5

RAW SEQUENCE LISTING                      DATE: 09/19/2000  
 PATENT APPLICATION: US/09/297,648              TIME: 18:20:31

Input Set : N:\COPIES\ISEQLIST 08-28-00.TXT  
 Output Set: N:\CRF3\09192000\I297648.raw

```

64 <222> LOCATION: (1)...(273)
65 <223> OTHER INFORMATION: n = A,T,C or G
67 <400> SEQUENCE: 1
W--> 68 gtggtttctt agcatgatgg tgtatgtatg gggtaatgga aannnnnnna aanttacnng 60
W--> 69 agngnancaa acangngcac nnnngngaata actanannna annccnaaan gatgcacnac 120
W--> 70 aanaccatn tnnatnatgc cntnnecatnn annntanatt ttcncanatt ctananaatcn 180
W--> 71 naccttcnnn cnnnnntccn ctntntntnt cacnccctnn cnnnttnnca ntatnnactn 240
W--> 72 anancatctn nanncaanan tnnntctatn tac 273
74 <210> SEQ ID NO: 2
75 <211> LENGTH: 300
76 <212> TYPE: DNA
77 <213> ORGANISM: Homo sapiens
79 <400> SEQUENCE: 2
80 gtttttcgaa gatcaactca agaagcaaga gttagcccgga ggtcaaatgc gaagtcagca 60
81 aacctcaggg ctgtcagagc agattgatgg gagcgctttg tctgtctttt ccacacacca 120
82 gaacaattcc ttgctgaatg tatttgacaga tcaacctaat aaaagtgatg caaccaatta 180
83 tgctagccac tctcctctg taaacagggc cttaacgccg gctgctaetc taagtgtgtg 240
84 tcagaattta gtggttgaag gactgcgatg tgtagttttg ccagaagatc ttgcccacaa 300
86 <210> SEQ ID NO: 3
87 <211> LENGTH: 294
88 <212> TYPE: DNA
89 <213> ORGANISM: Homo sapiens
91 <220> FEATURE:
92 <221> NAME/KEY: misc_feature
93 <222> LOCATION: (1)...(294)
94 <223> OTHER INFORMATION: n = A,T,C or G
96 <400> SEQUENCE: 3
97 ggggattcat aattccagac aggtagagaa cggttttatt tatgtagaga cagagtctcg 60
98 ctctgtcggc aggctgaggc gggagaatca ctggaacctg ggagggtggag gttgcgtgta 120
99 gctgagatca ttacactgca ctccagcctg ggcaacagag tgagactatg tctcaaaaaa 180
W--> 100 aaaaaaaaaa aaaaanaann nnnnnnttnn aaanntntng ggggncntnt nncnnaaaanc 240
W--> 101 caancttnan aaaanccttn gnnnatttgg nnaaaccccc anttaaaang cggg 294
103 <210> SEQ ID NO: 4
104 <211> LENGTH: 300
105 <212> TYPE: DNA
106 <213> ORGANISM: Homo sapiens
108 <220> FEATURE:
109 <221> NAME/KEY: misc_feature
110 <222> LOCATION: (1)...(300)
111 <223> OTHER INFORMATION: n = A,T,C or G
113 <400> SEQUENCE: 4
W--> 114 cggcaaaact nggangggang cgancgtngg gcnanaccn tgtttttgan gccngggccc 60
W--> 115 tnttgtangg ggcggntttn tgntgcngtn ctttnanacn ttttgagntn naaaaggnta 120
W--> 116 angnntnaan ttcngtncct tttgaaccn gatntntcn naaaattnc cttncctanc 180
W--> 117 aggangnttt tgggnttgn tttgntann ccngntcnc tttctggtt tgccctgaaca 240
118 ccaagtagct tcataatcaa agggtcattt tctggtttgt atcagaccgt atttataaag 300
120 <210> SEQ ID NO: 5
121 <211> LENGTH: 285
122 <212> TYPE: DNA

```

RAW SEQUENCE LISTING                      DATE: 09/19/2000  
 PATENT APPLICATION: US/09/297,648              TIME: 18:20:31

Input Set : N:\COPIES\ISEQLIST 08-28-00.TXT  
 Output Set: N:\CRF3\09192000\I297648.raw

```

123 <213> ORGANISM: Homo sapiens
125 <220> FEATURE:
126 <221> NAME/KEY: misc_feature
127 <222> LOCATION: (1)...(285) /
128 <223> OTHER INFORMATION: n = A,T,C or G
130 <400> SEQUENCE: 5
W--> 131 caattagntt annntcgncc cntgcnnttc canctngggnn nacccecatat ggaacatgtt      60
132 aaaaaaaaaa gccaggccga gegtgttgge tcacgcttgt aatcccagca ctttgggagg      120
133 ccgaggcggg tggatcacga ggtcaggaga tcgagttcca tcctggctaa cacagtgaaa      180
134 cgtgttttta ctaaaagtac aaaaaactag ctgggctgtg tggcaggagc ctgtagtccc      240
135 agctactcgg gaggtgagg caggagaatt gcttgaaccg gggag      285
137 <210> SEQ ID NO: 6
138 <211> LENGTH: 131
139 <212> TYPE: DNA
140 <213> ORGANISM: Homo sapiens
142 <400> SEQUENCE: 6
143 gctactcggg aggctgaggc aggagaatcg cttgaacctg ggaggcatag gttgcagtga      60
144 gctgagattg caccactgca ccccgacctg ggcaataaga gtgaaactcc atctcaaaaa      120
145 aaaaaaaaaa a      131
147 <210> SEQ ID NO: 7
148 <211> LENGTH: 287
149 <212> TYPE: DNA
150 <213> ORGANISM: Homo sapiens
152 <220> FEATURE:
153 <221> NAME/KEY: misc_feature
154 <222> LOCATION: (1)...(287) /
155 <223> OTHER INFORMATION: n = A,T,C or G
157 <400> SEQUENCE: 7
W--> 158 atatatgntt ttannaatna nannntggtg ngntaaagan tnantangnt tttgctgntg      60
W--> 159 natttttaggn cnaaaaaatt tnanatttnn tnggnantna aggaaaangg gnnttttgnt      120
W--> 160 angntgectn ancnnacnng nangttcnaa aaaccccngt ttnaaacnng gccncaggnt      180
W--> 161 ttnnnannnnn acagatatcc tggttccaga tgtcttgtaa gttaacctgc ctccatttcc      240
162 ctttctgtaa agcaaaaataa tgtttacacc taatctgtct ctccagg      287
164 <210> SEQ ID NO: 8
165 <211> LENGTH: 300
166 <212> TYPE: DNA
167 <213> ORGANISM: Homo sapiens
169 <220> FEATURE:
170 <221> NAME/KEY: misc_feature
171 <222> LOCATION: (1)...(300) /
172 <223> OTHER INFORMATION: n = A,T,C or G
174 <400> SEQUENCE: 8
175 gaaaattatc tcagtgaacg aggatgtcac tcttagatca gccctcgata gaaatctgaa      60
176 gagtgcgtg accgctgctt tctcatgct ccccgaaagc ttttctgaag aagacctctt      120
W--> 177 catagagatt gccggtctct cctattcagg tgactttcgg atggtggnnn nnnnnnatga      180
W--> 178 atcctacntg agctatgttc nngcccgaa nataacgaac ttgattggng ctacttnncc      240
W--> 179 caengetctt ggagattccn gacttnnnat atatgacnct nnagcactgg catnaacttg      300
181 <210> SEQ ID NO: 9
182 <211> LENGTH: 300

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/297,648

DATE: 09/19/2000

TIME: 18:20:31

Input Set : N:\COPIES\!SEQLIST 08-28-00.TXT

Output Set: N:\CRF3\09192000\I297648.raw

```

183 <212> TYPE: DNA
184 <213> ORGANISM: Homo sapiens
186 <400> SEQUENCE: 9
187 gtgcaccctt ttgtattaaa cactgcaagg gtgatgcagg ggagcaggaa agccatccta      60
188 aactcactac tgagtacgat tcagtatgtt cctgtggatg tctgctgtga ctaataataa      120
189 tttcttgcaag aatcagctac acttaattat gttgctgata gacaagcacc cagcgttcag      180
190 ctggcactaa gtgttttcat tgtaggatca gcagcagggt aaagactgaa cggttagtga      240
191 agacaaatgt cttaagaggc tgcgatgtct aggttgggct tgtgaactct tagtggccta      300
193 <210> SEQ ID NO: 10
194 <211> LENGTH: 296
195 <212> TYPE: DNA
196 <213> ORGANISM: Homo sapiens
198 <220> FEATURE:
199 <221> NAME/KEY: misc_feature
200 <222> LOCATION: (1)...(296) /
201 <223> OTHER INFORMATION: n = A,T,C or G
203 <400> SEQUENCE: 10
204 gccatgtgag gacataggga gaaagcagcc accattggca agccaagaga gagccctcac      60
205 caggaaacgat tggaccagca ccttgatctt ggattttcta gctccagaa cttacagtac      120
W--> 206 ggggtggctgt nnnnnnnnnn ngnttctgac naggtgnnac actnnnnctt cgtgntctn      180
W--> 207 tnaactgnntt cnnctngctg cngnntctgg acntccagag gttnatgcg cnatcaggac      240
W--> 208 nnnntgctat ancccttgct cacgatgagn actntgactt tgtngatgn ccgact      296
210 <210> SEQ ID NO: 11
211 <211> LENGTH: 300
212 <212> TYPE: DNA
213 <213> ORGANISM: Homo sapiens
215 <220> FEATURE:
216 <221> NAME/KEY: misc_feature /
217 <222> LOCATION: (1)...(300) /
218 <223> OTHER INFORMATION: n = A,T,C or G
220 <400> SEQUENCE: 11
221 gaaaaacccc gctctacta aaaatacaga aaattagcca ggcattggagg cacatgccta      60
222 taatcccagc tactcgggag gctgaggtag gagaatcgct tgaatccggg agctggagggt      120
223 tgcagtgcgc caagatcgca ccattgcact ccagcctggg caacaagagc gaaactccat      180
W--> 224 ctcaaaaaaa aaaannnnnn nnnnnnnngg atgatnanch tgganctggn tntttttaa      240
W--> 225 cgtngttttt ngangcttna aactntnaan gctttnatat aangntntca nctgtatgtt      300
227 <210> SEQ ID NO: 12
228 <211> LENGTH: 300
229 <212> TYPE: DNA
230 <213> ORGANISM: Homo sapiens
232 <400> SEQUENCE: 12
233 aaggagtac ccctgggtca cccaagctga gacatcagtt ggtggttggt cagaacttgt      60
234 gcccaaatat gctgagtcag cggctctgcc cgggccaaa tgctgagtc gcacctctgc      120
235 ccgggcagtc tgcaggtcgg ccctaccttt gctttctgcc tgtggttct atcagggcac      180
236 gcacttcagt tctgttgggc agggagacgt gcatcagact ctctccagg catatgtgct      240
237 gtcttgcgct tgcgctggc ctccaaacc cctagggata cctggggcca gctgggcagt      300
239 <210> SEQ ID NO: 13
240 <211> LENGTH: 300
241 <212> TYPE: DNA

```

RAW SEQUENCE LISTING                      DATE: 09/19/2000  
 PATENT APPLICATION: US/09/297,648              TIME: 18:20:31

Input Set : N:\COPIES\!SEQLIST 08-28-00.TXT  
 Output Set: N:\CRF3\09192000\I297648.raw

```

242 <213> ORGANISM: Homo sapiens
244 <400> SEQUENCE: 13
245 gagggatgaa aatgagccct gggaggagg aaggagcag gaggggtggc tgcattgtac      60
246 cgtcccctac ctctcccac gtggagggtg gaggagttat gagggaggaa gtcaactgct      120
247 gttcagctc agaataaagg tgccgttcac tggctcagtt acctcctgtg taccggcacc      180
248 ttgtgttggg aatgttcccc cctccctagg gaccaaggac caccctaca aaaagagtaa      240
249 tgggtgggtg atactccctc aagccaaaga ggagctcccc aacctgttct agggaccacg      300
251 <210> SEQ ID NO: 14
252 <211> LENGTH: 300
253 <212> TYPE: DNA
254 <213> ORGANISM: Homo sapiens
256 <400> SEQUENCE: 14
257 cccacaagag gtggggccct tgttgaacac aatgatcaag ggccgataca actagcctgc      60
258 cagggttcaa gccctcctgc cagggtactg ctatcccgtc cacaccgctt cattgatgag      120
259 gacaggagac tccaagcgtc agtattgcac gctgcactta atggactgga ctcttgccat      180
260 ggcccaggag tcaggtgttt ggagcgaggc agggcagttg gcactccact cctatttgga      240
261 ggacttcat acccttgctt cttgtgcccc agcaccttct ctctctgccc ccgcctaaaa      300
263 <210> SEQ ID NO: 15
264 <211> LENGTH: 126
265 <212> TYPE: DNA
266 <213> ORGANISM: Homo sapiens
268 <220> FEATURE:
269 <221> NAME/KEY: misc_feature
270 <222> LOCATION: (1)...(126)
271 <223> OTHER INFORMATION: n = A,T,C or G
273 <400> SEQUENCE: 15
W--> 274 gggaaaaanng nnanaccngt genttggaaa nntttggnga annntccctn anatgaggt      60
W--> 275 gcaaaanccg cagactggan aaangtgta aaacttttnt aaactctctt gggctnana      120
W--> 276 cattnt
278 <210> SEQ ID NO: 16
279 <211> LENGTH: 300
280 <212> TYPE: DNA
281 <213> ORGANISM: Homo sapiens
283 <400> SEQUENCE: 16
284 agaagttcta gcacatctta atttccctaa tagtttaatt gatgaagagc attgatgaag      60
285 agttaggagg tctccctttg tacctacatt ttccgctttt ttagaatgag aagatgagaa      120
286 cgacctccag ttcacatgta cgggtgctgt gaggatccag tagggagat acagtgtcaa      180
287 gcaccaagca ggtgcaagtg agcacaatcc aattttacat caggttacc ctcaggaca      240
288 gttgctttga cgtggaaggt agagagggag ttgaaaggag ggtttgcatg gttggcagag      300
290 <210> SEQ ID NO: 17
291 <211> LENGTH: 281
292 <212> TYPE: DNA
293 <213> ORGANISM: Homo sapiens
295 <220> FEATURE:
296 <221> NAME/KEY: misc_feature
297 <222> LOCATION: (1)...(281)
298 <223> OTHER INFORMATION: n = A,T,C or G
300 <400> SEQUENCE: 17
W--> 301 agggatacgt gttgtnttaa naagtganng nnnngcntnc anggtgncng tcantcctat      60

```

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

## VERIFICATION SUMMARY

DATE: 09/19/2000

PATENT APPLICATION: US/09/297,648

TIME: 18:20:32

Input Set : N:\COPIES\!SEQLIST 08-28-00.TXT

Output Set: N:\CRF3\09192000\I297648.raw

L:68 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:69 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:70 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:71 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:72 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:100 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:101 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3  
L:114 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4  
L:115 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4  
L:116 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4  
L:117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4  
L:131 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5  
L:158 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7  
L:159 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7  
L:160 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7  
L:161 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7  
L:177 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8  
L:178 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8  
L:179 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8  
L:206 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10  
L:207 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10  
L:208 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10  
L:224 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11  
L:225 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11  
L:274 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15  
L:275 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15  
L:276 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15  
L:301 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17  
L:302 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17  
L:303 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17  
L:304 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17  
L:305 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17  
L:394 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24  
L:408 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25  
L:409 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25  
L:410 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25  
L:411 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25  
L:438 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27  
L:439 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27  
L:440 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27  
L:453 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28  
L:454 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28  
L:455 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28  
L:456 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28  
L:457 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28  
L:482 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30  
L:483 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30  
L:484 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30

VERIFICATION SUMMARY

DATE: 09/19/2000

PATENT APPLICATION: US/09/297,648

TIME: 18:20:32

Input Set : N:\COPIES\!SEQLIST 08-28-00.TXT

Output Set: N:\CRF3\09192000\I297648.raw

L:485 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30  
L:523 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33